REMARKS

New claims 21-34 have been added. Support for these claims can be found throughout the specification and the drawings. Claims 1, 13, 14, and 20 have been amended. No new matter has been added. Support for the amendments can be found throughout the specification and drawings, for example at page 1, line 27 to page 2, line 2. Claims 1-20 are pending. Claims 1, 14 and 20 are independent.

Rejections under 35 U.S.C. § 103(a)

Claims 1-20

Claims 1-20 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,047,033 to Malmberg ("Malmberg") or U.S. Patent No. 5,490,971 to Gifford ("Gifford") in view of U.S. Patent No. 5,347,438 to Lerner ("Lerner"). See Office Action at page 2. Claims 1, 14, and 20 are independent.

Independent claim 1

Applicants have discovered a light source for examination of a substance which emits light at a wavelength greater than the wavelength of light emitted from the light source when the substance is excited by the wavelength of light emitted from the light source. This light source includes a housing with a light outlet, and a low-voltage lamp positioned to emit light through the light outlet, where the low-voltage lamp emits light with a wavelength within a predetermined range less than about 500 nm to enhance the emission of light from the substance when it is excited by the light emitted from the lamp. See independent claim 1.

Malmberg describes a device for checking the authenticity of documents by marking the documents with a rare earth element and then on excitation of the element with "radiation of a longer wavelength, preferably infra-red radiation, it (the element) emits radiation of a shorter wavelength, in particular visible light especially green light; in other words on excitation with photons of a given energy it emits photons of a specific higher energy, that is to say in contrast to what happens in normal fluorescence." See Column 1 lines 48-56 of Malmberg. Malmberg uses infra-red radiation to stimulate excitation of the emitted light. Though it does not identify a wavelength, Malmberg does not use a low-voltage lamp that emits light with a wavelength within a predetermined range less than about 500 nm because 500 nm is at the opposite end of

the spectrum from the infra-red radiation that Malmberg identifies. In claim 1, the low-voltage lamp emits a wavelength within a predetermined range of less than about 500 nm.

Malmberg does not suggest, teach or motivate one skilled in the art to use a low-voltage lamp that emits light at a wavelength within a predetermined range of less than about 500 nm. If anything, Malmberg teaches away from such an approach or at least suggests such an approach would not work when it states "[t]he proposed solutions using UV-fluorescence have the following drawbacks: UV-fluorescing substances are relatively easy to acquire for a forger, the requisite UV light source requires a high voltage and is difficult to coordinate with modern electronic components; the UV light source is difficult to modulate." See Column 1 lines 30-36 of Malmberg. Thus, Malmberg does not teach a low-voltage lamp that emits light in a predetermined wavelength range of less than about 500.

Gifford describes a chemical detector apparatus for measuring the concentration of a chemical in a sample. It uses a tungsten light source for irradiation of the sample and then measures the absorbance or fluorescence of the chemical in a reagent. See column 6, line 60 – column 7, line 6 of Gifford. Gifford does not suggest, teach or motivate one skilled in the art to use a low-voltage lamp that emits light in a predetermined wavelength range of less than about 500 nm. In fact, Gifford does not manipulate the wavelength of light incident on its sample beyond using a low-voltage tungsten light source. See column 6, line 60 – column 7, line 6. Accordingly, Gifford does not suggest a low-voltage lamp that emits light in a predetermined wavelength range of less than about 500 nm.

Lerner fails to cure the deficiencies of either Malmberg or Gifford. Lerner describes a headlight for a bicycle with a hole in the reflecting bowl that allows light to escape through the rear of the lamp. The rear of the lamp is made of a transparent colored material such that the light passing through the rear is a uniform color. See Column 1, line 58-Column 2, line 3 of Lerner. Lerner does not suggest, teach or motivate one skilled in the art to use a low-voltage lamp that emits light in a predetermined wavelength range of less than about 500 nm. In combination with Malmberg or Gifford, Lerner still fails to teach or suggest using a low-voltage lamptha emits light in a predetermined wavelength range of less than about 500 nm.

Finally, neither Gifford nor Malmberg provide any motivation to combine with Lerner. The Examiner has failed to establish a *prima facie* case for such a combination. The cited

references must provide some suggestion, motivation, or teaching for combining known components. See Heidelberger Druckmaschinen AG v. Hantscho Commercial Prods., Inc., 21 F.3d 1068, 1072, 30 USPQ2d 1377, 1379 (Fed.Cir.1994) ("When the patented invention is made by combining known components to achieve a new system, the prior art must provide a suggestion or motivation to make such a combination."); C.R. Bard, Inc. v. M3 Systems, Inc., 157 F.3d 1340 (Fed. Cir. 2000). The requisite motivation to combine the references in this case has not been provided.

For at least these reasons independent claim 1 and the claims that depend therefrom are patentable. Applicants respectfully request reconsideration and withdrawal of this rejection.

Independent Claim 14

Independent claim 14 describes a light source for examination of a substance which emits light at a wavelength greater than the wavelength of light emitted from the light source when the substance is excited by the wavelength of light emitted from the light source. This light source includes a housing with a light outlet, and a low heat generating lamp positioned in the housing to emit light through the light outlet, where the low heat generating lamp emits light with a wavelength within a predetermined range of less than about 500 nm to enhance the emission of light from the substance when it is excited by the light emitted from the lamp.

Given that independent claim 14 includes substantially the same language of independent claim 1 with respect to examination of a substance using a light source that emits light at a wavelength in a predetermined range less than about 500 nm, the discussions presented above for claim 1 equally apply to independent claim 14. Furthermore, independent claim 14 also claims a low heat generating lamp. This feature of the claim is not contained in any of Malmberg, Gifford or Lerner. Malmberg uses a low voltage infrared light source, Gifford uses a low voltage tungsten light source and Lerner uses an incandescent light source. None of these sources are low heat generating lamps. Combining them in any manner still does not result in low heat generating lamp.

For at least these reasons independent claim 14 and the claims that depend from it are patentable. Applicants respectfully request reconsideration and withdrawl of this rejection.

Independent Claim 20

Independent claim 20 describes a method of detecting a leak in a closed system containing a substance for emitting an emission wavelength of light after being excited by an excitation wavelength of light. The method includes providing light within a predetermined wavelength range of less than about 500 nm from a light source to the system, where the light is emitted from a low-voltage lamp connected to a source of electrical power. The method also includes illuminating the components of the system with the light from the light source and then identifying leak sites in the system by detecting emission of light from the substance at any leak sites.

Neither Malberg, Gifford, Lerner, nor combinations of these references teach, suggest, or motivate one skilled in the art to practice the method identified by independent claim 20. Malmberg describes a device for checking the authenticity of documents by marking the documents with a rare earth element and then detecting light emitted upon excitation of the element. See Column 1 lines 48-56 of Malmberg. Gifford describes a chemical detector apparatus for measuring the concentration of a chemical in a sample. It uses a tungsten light source for irradiation of the sample and then measures the absorbance or fluorescence of the chemical in a reagent. See column 6, line 60 – column 7, line 6 of Gifford. Lerner describes a headlight for a bicycle with a hole in the reflecting bowl that allows light to escape through the rear of the lamp. See Column 1, line 58-Column 2 line3 of Lerner. None of these alone or in combination suggest a method of detecting a leak in a closed system containing a substance for emitting an emission wavelength of light after being excited by an excitation wavelength of light or would motivate one skilled in the art to use the method of independent claim 20. Furthermore, none of the references or combination of the references suggests providing a light source within a predetermined wavelength range of less than about 500 nm for examining a system for leaks by detecting light emission from a substance in the system.

For at least these reasons independent claim 20 and the claims that depend from it are patentable. Applicants respectfully request reconsideration and withdrawal of this rejection.

Applicants ask that all claims be allowed. Enclosed is a $123 check for excess claim fees. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: Nov 22, 02

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Version with markings to show changes made

In the claims:

Claims 1, 13, 14 and 20 have been amended as follows:

--1. (Amended) A light source for examination of a substance which emits light at a wavelength greater than a wavelength of light emitted from the light source when the substance is excited by the wavelength of light emitted from the light source, the light source comprising:

a housing having a light outlet; and

a low-voltage lamp positioned in the housing and oriented to emit light through the light outlet,

wherein the low-voltage lamp emits light of a wavelength within a predetermined range less than about 500 nm effective to enhance the detection of emission of light from a substance when the substance is excited by the wavelength of light emitted from the lamp.--

--13. (Amended) The light source of claim 12[1], wherein the filter lens is a dichroic filter.--

--14. (Amended) A light source for examination of a substance which emits light at a wavelength greater than a wavelength of light emitted from the light source when the substance is excited by the wavelength of light emitted from the light source, the light source comprising:

a housing having a light outlet; and

a low heat generating lamp positioned in the housing and oriented to emit light through the light outlet,

wherein the low heat generating lamp emits light of a wavelength within a predetermined range less than about 500 nm effective to enhance the detection of emission of light from a substance when the substance is excited by the wavelength of light emitted from the lamp.--

--20. (Amended) A method of detecting a leak in a closed system containing a substance for emitting an emission wavelength of light after being excited by an excitation wavelength of light, the method comprising:

providing light within a predetermined wavelength range less than about 500 nm from a light source to the closed system**[a leak site]**, the light emitted from a low-voltage lamp, wherein the lamp is connected to a source of electrical power; **[and]**

illuminating a component of the system with the light within the predetermined wavlength range; and

detecting emission of light from the substance at a leak site. --

New claims 21-34 have been added.